

REMARKS/ARGUMENTS

Reconsideration and allowance in view of the foregoing amendment and the following remarks are respectfully requested.

Claims 1-2, 4-5, 8-9, 11-13 and 15-17 were rejected under 35 USC 112, second paragraph, as being indefinite. The Examiner noted that the frame of reference for the recited angular ranges was unclear and that the Examiner was construing 0 degrees as coincident with a vertical line extending upward from the cam ring. In this regard, it is believed that the Examiner's proposed definition with reference to a vertical line is vague. In the context of a rotary to linear motion transformation including an eccentric cam and plungers, the frame of reference is more accurately with respect to the respective limits of motion of a plunger. Thus, claims 1, 4 and 13 have been amended to more specifically provide that 0 and 360 degrees coincide with a bottom dead point of the first plunger and that 180 degrees coincides with a top dead point of the first plunger. It is believed that this gives a proper and fully understandable frame of reference for those skilled in the art. In view of the foregoing, reconsideration and withdrawal of this rejection are requested.

The dependencies of claims 8, 9, 11 and 12 have been revised as requested by the Examiner.

Claims 1, 2, 8, 9 and 13-17 were rejected under 35 USC 103(a) as being unpatentable over Mori in view of Iwasaki and Bouchanveau. Applicant respectfully traverses this rejection.

In Iwasaki a shearing force breaks key 32 when a force transmitted through the connection of the two members exceeds a predetermined value, thereby releasing the lock between the two members. More specifically, Iwasaki teaches the provision of an additional breakable (ceramic) component so that two parts that are normally locked together with be unlocked. In the present invention, the safeguard does not constitute

the provision of an additional component part that locks two pieces together but rather provides for the selected breakage of one of the component parts, the cam ring, so that potential damage to the rest of the mechanism is minimized or avoided entirely (see page 4, lines 16-18 of applicant's specification). Thus, applicant proposes to provide for the breakage of one of the components of the mechanism to preserve the remaining components of the mechanism. The present invention does not propose to unlock two components of the mechanism using a breakable component as Iwasaki proposes. Thus, the concept of the safety breaker of the invention and Iwasaki are materially different and Iwasaki would not suggest to the skilled artisan that a component part of a mechanism, such as the cam ring in the combination claimed, should be made breakable.

For all the reasons advanced above it is respectfully submitted that one skilled in the art, without the benefit of applicant's disclosure would not be motivated to modify the fuel injection pump of Mori to form grooves in the cam ring thereof. Rather, Iwasaki would teach the provision of a safety breaker between two normally locked components, such as between eccentric cam 21 and shaft 70. Because Iwasaki teaches the provision of an additional component locking parts together, and which is breakable, as opposed to making a component part of the mechanism itself breakable, it is respectfully submitted that Iwasaki does not anticipate nor render obvious the concept of the invention nor the apparatus specifically claimed by applicant. Thus, even if Mori could be combined with Iwasaki and Bouchanveau as suggested by the Examiner, the invention claimed by applicant would still not be anticipated nor obvious.

Section 103 does not allow the Examiner to engage in picking and choosing from the prior art only to the extent that it will support a holding of obviousness, while excluding parts of the prior art essential to the full appreciation of what the prior art suggests to one of ordinary skill in the art. In re Wesslau, 147 USPQ 391 (CCPA 1975).

It further is respectfully noted that the safety breaker in Iwasaki is used for power steering. In contrast to the basic teachings of Iwasaki, the present invention proposes the provision of grooves as a safety failure point in fuel injection pumps or rotation-linear motion transforming mechanisms. It is respectfully submitted, therefore, that the technology and the environment of the invention and Iwasaki are completely different so that the environment in which the invention is used presents challenges and difficulties such that one of ordinary skill in this art would not obviously look to and adopt the technology of Iwasaki in the environment of the invention.

Further, in the reference to Iwasaki, the key 32 is formed with a pair of notches 34,36. This reference mentions that "the width of the notches 34 and 36 at the opening end thereof is substantially wider than the clearance between the surface 38 and 40 such that, even when some relative shifting occurs in the leftward or rightward direction as viewed in Fig. 4 among the steering shaft 10, the gear 18 and the key 32 due to shifting of the clearance or thermal expansion, the edge defined by the outer surface 38 and the opposite side surface of the sectoral key groove 28 as well as the inside surface 40 and the opposite side surface of the linear key groove 30 still remain as exposed in the notches 34 and 36" (see in this regard, column 7, lines 64 – column 8, line 7). The safeguards 26 in the present invention extend over the whole width of the cam ring 21 (i.e., from one end to the other end of the cam ring 21), thereby facilitating the formation of the crack in the cam ring 21.

Therefore, the position of the safeguards (26) is different from the Iwasaki notches, and those safeguards (26) are not influenced by shifting due to thermal expansion.


For all the reasons advanced above, reconsideration and withdrawal of the rejection based on Mori, Iwasaki and Bouchanveau are solicited.

MORI, K.
Appl. No. 10/827,418
October 2, 2008

All objections and rejections having been addressed, it is respectfully submitted that the present application is in condition for allowance and an early Notice to that effect is earnestly solicited.

Respectfully submitted,

NIXON & VANDERHYE P.C.

By: 
Michelle N. Lester
Reg. No. 32,331

MNL:slj
901 North Glebe Road, 11th Floor
Arlington, VA 22203-1808
Telephone: (703) 816-4000
Facsimile: (703) 816-4100